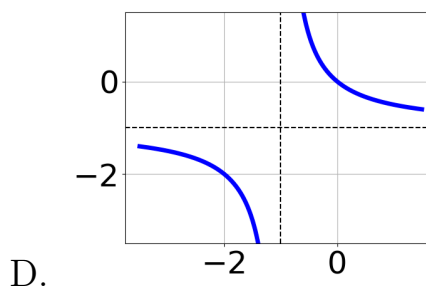
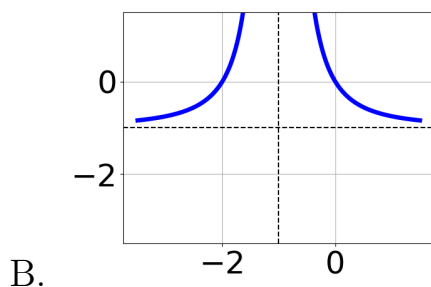
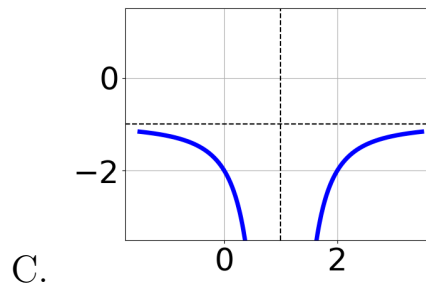
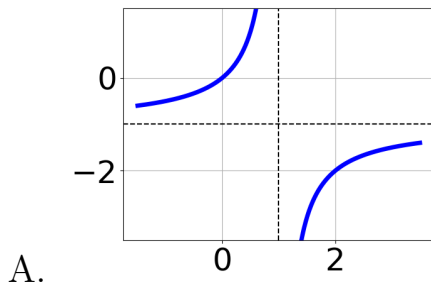


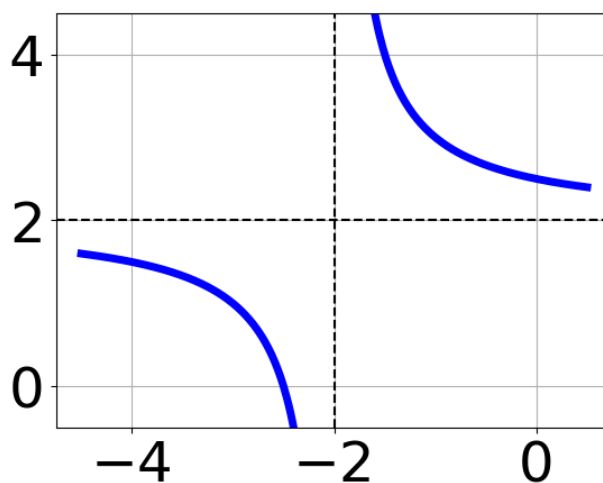
1. Choose the graph of the equation below.

$$f(x) = \frac{1}{(x-1)^2} + 1$$



E. None of the above.

2. Choose the equation of the function graphed below.

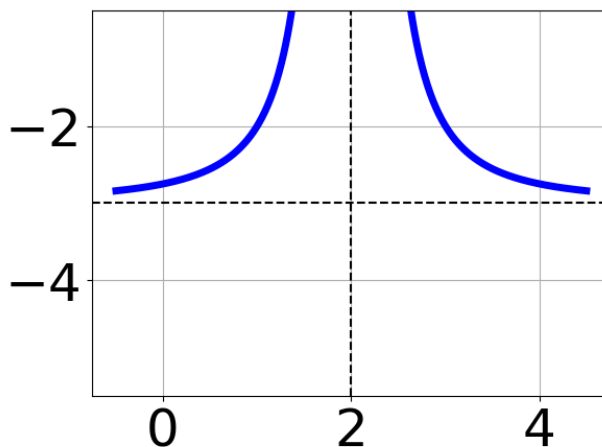


A. $f(x) = \frac{-1}{(x+2)^2} + 2$

B. $f(x) = \frac{-1}{x+2} + 2$

- C. $f(x) = \frac{1}{x-2} + 2$
- D. $f(x) = \frac{1}{(x-2)^2} + 2$
- E. None of the above

3. Choose the equation of the function graphed below.



- A. $f(x) = \frac{1}{(x+2)^2} + 4$
- B. $f(x) = \frac{-1}{(x-2)^2} + 4$
- C. $f(x) = \frac{-1}{x-2} + 4$
- D. $f(x) = \frac{1}{x+2} + 4$
- E. None of the above

4. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{5}{9x-4} + -8 = \frac{-6}{-63x+28}$$

- A. $x_1 \in [-0.2, 2.1]$ and $x_2 \in [0.51, 0.61]$

- B. $x_1 \in [-0.5, -0.2]$ and $x_2 \in [0.43, 0.53]$
 - C. $x \in [-0.5, -0.2]$
 - D. All solutions lead to invalid or complex values in the equation.
 - E. $x \in [-0.5, 1.5]$
-

5. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{7x}{4x-3} + \frac{-3x^2}{-12x^2 - 19x + 21} = \frac{-6}{-3x-7}$$

- A. All solutions lead to invalid or complex values in the equation.
 - B. $x_1 \in [-0.32, 0.21]$ and $x_2 \in [-1.51, -0.74]$
 - C. $x \in [-3.39, -1.55]$
 - D. $x \in [0.73, 1.4]$
 - E. $x_1 \in [0.73, 1.4]$ and $x_2 \in [-2.36, -2.22]$
-

6. Determine the domain of the function below.

$$f(x) = \frac{5}{15x^2 - 37x + 20}$$

- A. All Real numbers except $x = a$, where $a \in [0.67, 1.06]$
 - B. All Real numbers.
 - C. All Real numbers except $x = a$, where $a \in [14.93, 15.63]$
 - D. All Real numbers except $x = a$ and $x = b$, where $a \in [14.93, 15.63]$ and $b \in [19.8, 21.54]$
 - E. All Real numbers except $x = a$ and $x = b$, where $a \in [0.67, 1.06]$ and $b \in [0.92, 2.78]$
-

7. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-8}{-2x - 5} + -8 = \frac{6}{-14x - 35}$$

- A. $x \in [-1.95, -0.95]$
 - B. $x_1 \in [-1.95, 0.05]$ and $x_2 \in [3.05, 4.05]$
 - C. All solutions lead to invalid or complex values in the equation.
 - D. $x \in [3.05, 4.05]$
 - E. $x_1 \in [-1.95, 0.05]$ and $x_2 \in [-2.62, -0.62]$
-

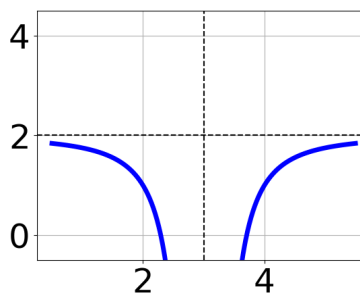
8. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-6x}{3x + 4} + \frac{-4x^2}{12x^2 + 28x + 16} = \frac{7}{4x + 4}$$

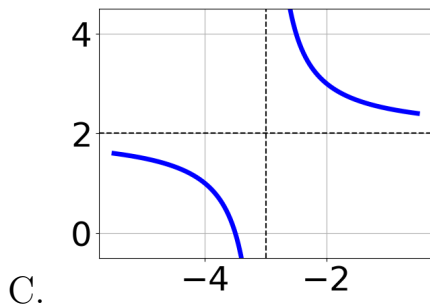
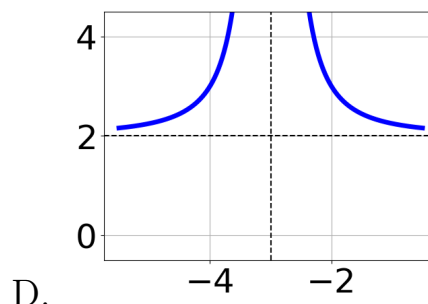
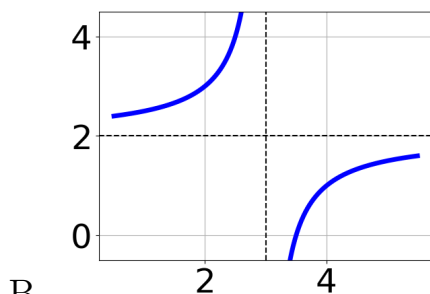
- A. $x_1 \in [-1.45, -1.13]$ and $x_2 \in [-1.26, 0.58]$
 - B. $x \in [-1.07, -0.84]$
 - C. $x \in [-1.45, -1.13]$
 - D. All solutions lead to invalid or complex values in the equation.
 - E. $x_1 \in [-0.86, -0.73]$ and $x_2 \in [-2.56, -1.23]$
-

9. Choose the graph of the equation below.

$$f(x) = \frac{1}{x + 3} + 2$$



A.



E. None of the above.

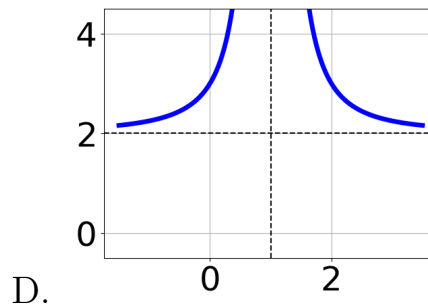
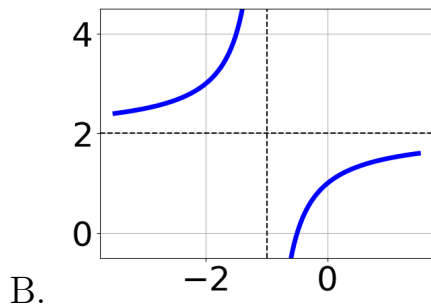
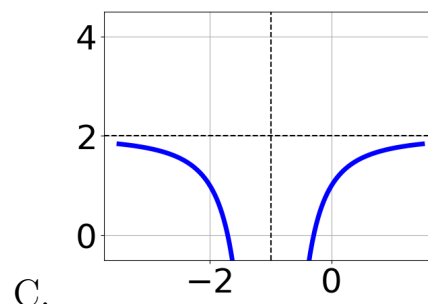
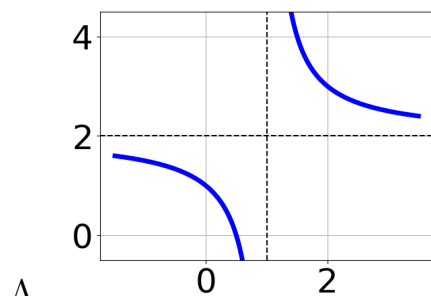
10. Determine the domain of the function below.

$$f(x) = \frac{4}{24x^2 + 34x + 12}$$

- A. All Real numbers except $x = a$, where $a \in [-24.07, -23.74]$
- B. All Real numbers except $x = a$, where $a \in [-0.81, -0.75]$
- C. All Real numbers except $x = a$ and $x = b$, where $a \in [-24.07, -23.74]$ and $b \in [-12.04, -11.91]$
- D. All Real numbers.
- E. All Real numbers except $x = a$ and $x = b$, where $a \in [-0.81, -0.75]$ and $b \in [-0.69, -0.66]$

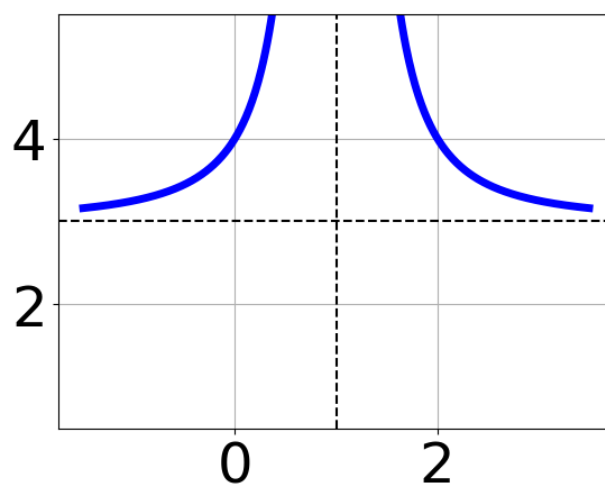
11. Choose the graph of the equation below.

$$f(x) = \frac{-1}{(x+1)^2} + 2$$



E. None of the above.

12. Choose the equation of the function graphed below.



A. $f(x) = \frac{1}{(x-1)^2} + 3$

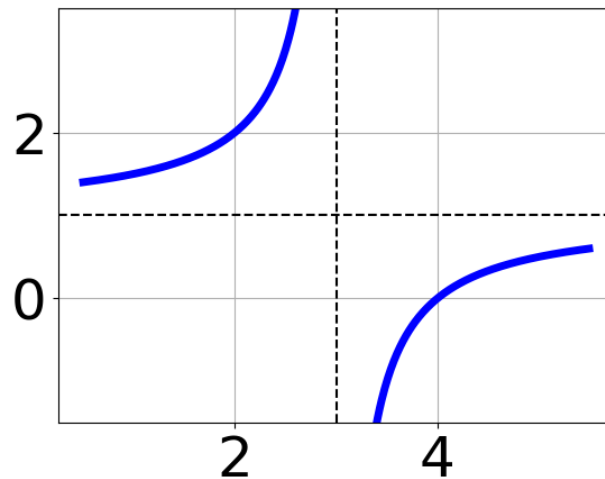
B. $f(x) = \frac{1}{x-1} + 3$

C. $f(x) = \frac{-1}{x+1} + 3$

D. $f(x) = \frac{-1}{(x+1)^2} + 3$

E. None of the above

13. Choose the equation of the function graphed below.



A. $f(x) = \frac{-1}{x-3} + 1$

B. $f(x) = \frac{-1}{(x-3)^2} + 1$

C. $f(x) = \frac{1}{x+3} + 1$

D. $f(x) = \frac{1}{(x+3)^2} + 1$

E. None of the above

14. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-56}{-35x-14} + 1 = \frac{-56}{-35x-14}$$

A. $x \in [-0.4, 0.6]$

B. $x_1 \in [-1.3, -0.3]$ and $x_2 \in [0.2, 1.2]$

- C. All solutions lead to invalid or complex values in the equation.
 - D. $x \in [0.3, 1.6]$
 - E. $x_1 \in [-1.3, -0.3]$ and $x_2 \in [-1.5, -0.1]$
-

15. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-7x}{2x-3} + \frac{-5x^2}{12x^2-24x+9} = \frac{-4}{6x-3}$$

- A. $x \in [-0.77, 0.63]$
 - B. $x_1 \in [0.55, 1.03]$ and $x_2 \in [-0.16, 0.48]$
 - C. All solutions lead to invalid or complex values in the equation.
 - D. $x_1 \in [0.82, 2.19]$ and $x_2 \in [0.46, 0.85]$
 - E. $x \in [0.82, 2.19]$
-

16. Determine the domain of the function below.

$$f(x) = \frac{5}{20x^2 - 5x - 25}$$

- A. All Real numbers except $x = a$, where $a \in [-25, -23]$
 - B. All Real numbers except $x = a$, where $a \in [-1, 1]$
 - C. All Real numbers.
 - D. All Real numbers except $x = a$ and $x = b$, where $a \in [-25, -23]$ and $b \in [19, 23]$
 - E. All Real numbers except $x = a$ and $x = b$, where $a \in [-1, 1]$ and $b \in [1.25, 2.25]$
-

17. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{5}{-4x-2} + -7 = \frac{3}{36x+18}$$

- A. $x \in [0.1, 1.4]$
- B. $x_1 \in [-0.8, -0.2]$ and $x_2 \in [-0.4, 2.1]$
- C. $x_1 \in [-0.8, -0.2]$ and $x_2 \in [-0.8, 0.2]$
- D. $x \in [-0.69, 0.31]$
- E. All solutions lead to invalid or complex values in the equation.

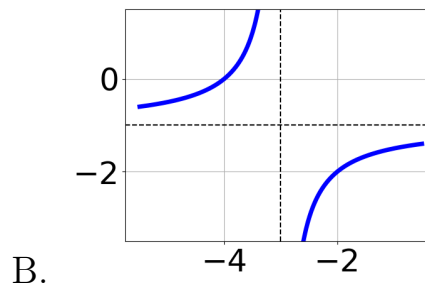
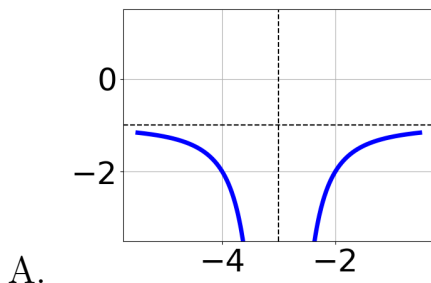
18. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

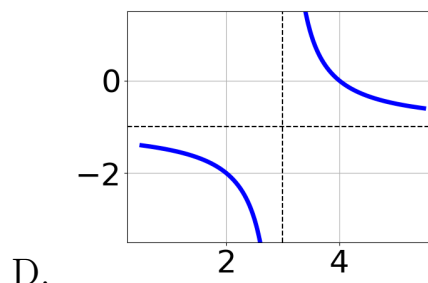
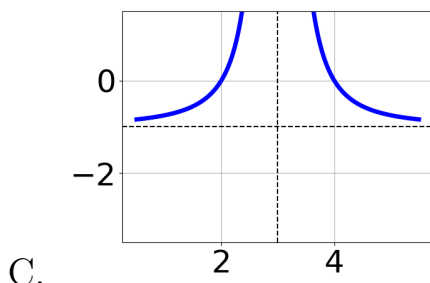
$$\frac{4x}{2x+2} + \frac{-7x^2}{-12x^2 - 6x + 6} = \frac{-4}{-6x+3}$$

- A. All solutions lead to invalid or complex values in the equation.
- B. $x \in [0.69, 0.98]$
- C. $x_1 \in [-0.64, 0.28]$ and $x_2 \in [-1.7, -0.8]$
- D. $x \in [-0.08, 0.57]$
- E. $x_1 \in [-0.64, 0.28]$ and $x_2 \in [-0.8, 1.7]$

19. Choose the graph of the equation below.

$$f(x) = \frac{1}{x-3} - 1$$





E. None of the above.

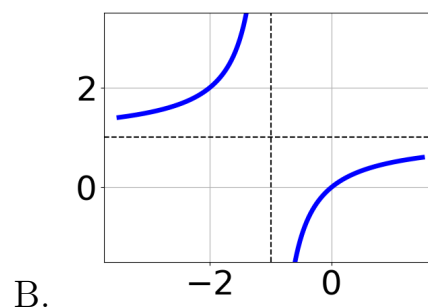
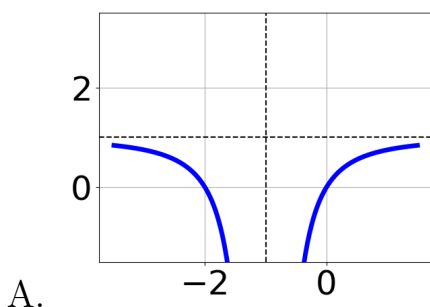
20. Determine the domain of the function below.

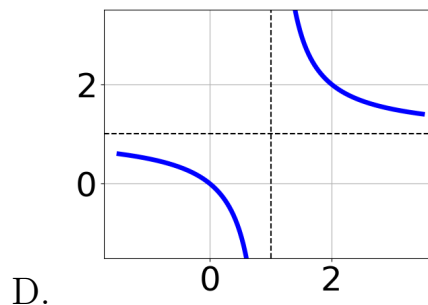
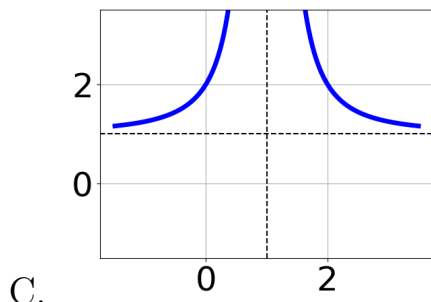
$$f(x) = \frac{5}{20x^2 + 9x - 20}$$

- A. All Real numbers except $x = a$, where $a \in [-2.25, -0.25]$
- B. All Real numbers except $x = a$ and $x = b$, where $a \in [-2.25, -0.25]$ and $b \in [0.8, 3.8]$
- C. All Real numbers.
- D. All Real numbers except $x = a$, where $a \in [-20, -19]$
- E. All Real numbers except $x = a$ and $x = b$, where $a \in [-20, -19]$ and $b \in [17, 24]$

21. Choose the graph of the equation below.

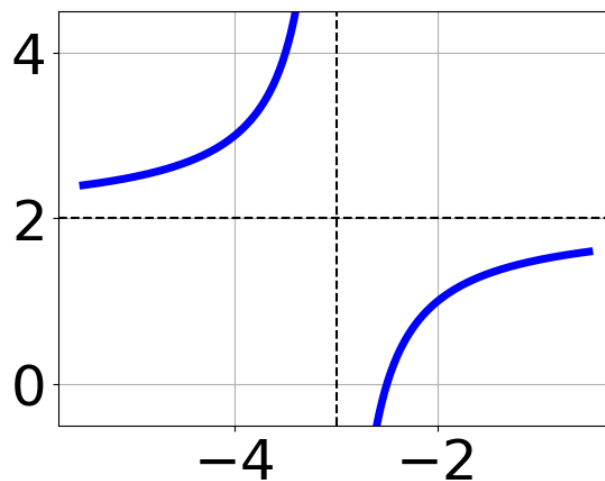
$$f(x) = \frac{1}{x-1} + 1$$





E. None of the above.

22. Choose the equation of the function graphed below.



A. $f(x) = \frac{1}{x-3} + 2$

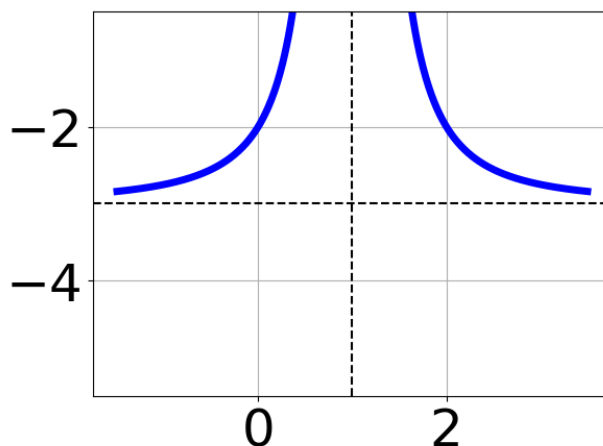
B. $f(x) = \frac{-1}{x+3} + 2$

C. $f(x) = \frac{-1}{(x+3)^2} + 2$

D. $f(x) = \frac{1}{(x-3)^2} + 2$

E. None of the above

23. Choose the equation of the function graphed below.



- A. $f(x) = \frac{-1}{x-1} + 4$
- B. $f(x) = \frac{-1}{(x-1)^2} + 4$
- C. $f(x) = \frac{1}{(x+1)^2} + 4$
- D. $f(x) = \frac{1}{x+1} + 4$
- E. None of the above

24. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-39}{-78x-39} + 1 = \frac{-39}{-78x-39}$$

- A. $x_1 \in [-0.6, 0.2]$ and $x_2 \in [-0.3, 2.1]$
- B. $x \in [-0.5, 0.5]$
- C. All solutions lead to invalid or complex values in the equation.
- D. $x \in [0.3, 1.4]$
- E. $x_1 \in [-0.6, 0.2]$ and $x_2 \in [-0.6, -0.2]$

25. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{6x}{6x+6} + \frac{-4x^2}{-12x^2-36x-24} = \frac{5}{-2x-4}$$

- A. $x_1 \in [-3.46, -2.65]$ and $x_2 \in [-1.06, -0.71]$
 - B. $x_1 \in [-3.46, -2.65]$ and $x_2 \in [-0.77, -0.49]$
 - C. $x \in [-2.32, -0.88]$
 - D. All solutions lead to invalid or complex values in the equation.
 - E. $x \in [-1.35, 0.49]$
-

26. Determine the domain of the function below.

$$f(x) = \frac{3}{12x^2 + 29x + 15}$$

- A. All Real numbers except $x = a$ and $x = b$, where $a \in [-15.6, -13.6]$ and $b \in [-13.9, -11.7]$
 - B. All Real numbers except $x = a$, where $a \in [-1.7, -1.5]$
 - C. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.7, -1.5]$ and $b \in [-0.8, -0.2]$
 - D. All Real numbers.
 - E. All Real numbers except $x = a$, where $a \in [-15.6, -13.6]$
-

27. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{84}{98x-98} + 1 = \frac{84}{98x-98}$$

- A. $x_1 \in [-1.3, 0.3]$ and $x_2 \in [0, 3]$
- B. All solutions lead to invalid or complex values in the equation.
- C. $x_1 \in [0.4, 1.8]$ and $x_2 \in [0, 3]$

- D. $x \in [1.0, 2.0]$
E. $x \in [-1.3, 0.3]$

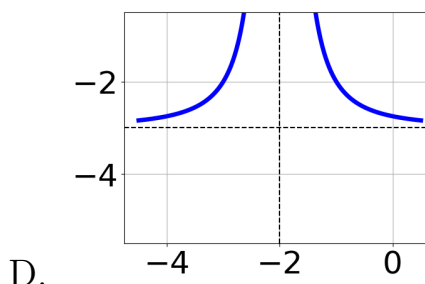
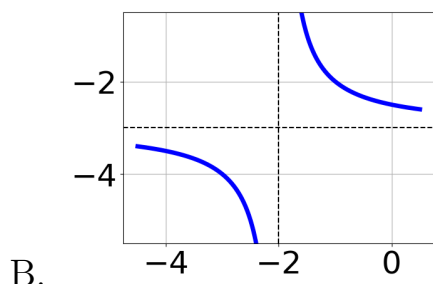
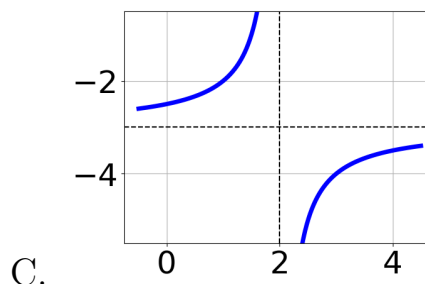
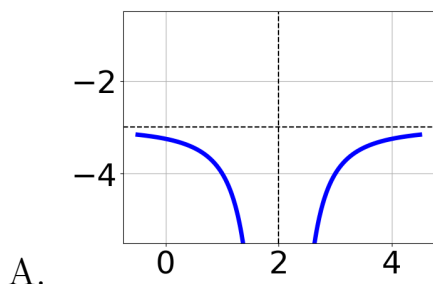
28. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{4x}{-5x + 6} + \frac{-4x^2}{-15x^2 + 28x - 12} = \frac{3}{3x - 2}$$

- A. $x \in [0.97, 1.79]$
B. $x_1 \in [-2.15, -1.77]$ and $x_2 \in [1.17, 1.24]$
C. $x_1 \in [-2.15, -1.77]$ and $x_2 \in [1.04, 1.13]$
D. All solutions lead to invalid or complex values in the equation.
E. $x \in [0.33, 0.72]$

29. Choose the graph of the equation below.

$$f(x) = \frac{1}{x + 2} - 3$$



- E. None of the above.

30. Determine the domain of the function below.

$$f(x) = \frac{4}{30x^2 - 49x + 20}$$

- A. All Real numbers except $x = a$, where $a \in [19.95, 20]$
 - B. All Real numbers except $x = a$ and $x = b$, where $a \in [0.78, 0.83]$ and $b \in [0.82, 0.84]$
 - C. All Real numbers.
 - D. All Real numbers except $x = a$ and $x = b$, where $a \in [19.95, 20]$ and $b \in [29.98, 30.02]$
 - E. All Real numbers except $x = a$, where $a \in [0.78, 0.83]$
-